



GEORGIA ROADS

“BETTER ROADS THROUGH COOPERATION”

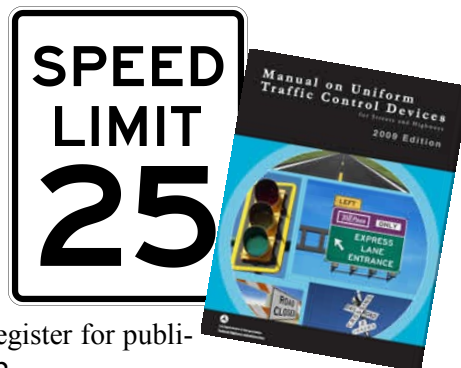
Volume 22, No. 20

FHWA Revises Deadlines for MUTCD Sign Compliance

Spring/Summer 2012

**A Newsletter
of Georgia's
Local
Technical
Assistance
Program
(LTAP)**

By now, you probably have heard that the Federal Highway Administration (FHWA) issued its long awaited revision regarding compliance dates in the 2009 Manual on Uniform Traffic Control Devices (MUTCD). The changes are intended to reduce the impacts of the compliance dates on local and state agencies and to simplify the information specified by the MUTCD. A final rule was sent to the Federal Register for publication May 2012 and became effective June 2012.



Here's a recap. In August 2011, U.S. Department of Transportation Secretary Ray LaHood announced an amendment to the rules that would eliminate 46 deadlines (eight that had already expired and 38 that had future compliance dates) and extend and/or revise the dates for four others. Among those removed was the 2018 deadline for replacing non-compliant street signs. LaHood shared those concerns after speaking with local and state officials across the county. "A specific deadline for replacing street signs makes no sense and would have cost communities across America millions of dollars in unnecessary expenses. We are proposing to eliminate these burdensome regulations. It's just plain common sense." FHWA will allow communities to retain historic street-name signs in locally identified historic districts. The target compliance dates for eight items that are critical to public safety will remain in effect.

So the deadlines are gone, but what happened to the requirement that agencies implement an assessment or management method designed to maintain sign retroreflectivity at or above established minimum levels? That one IS NOT gone, but the January 22, 2012 date has been extended until June 2014. The FHWA has not lowered the standards; they just removed the deadlines. Each agency's individual management plan will determine when their signs will be replaced. The change allows local governments to make upgrades to signs periodically as specified in their individual plan without having to allocate large sums of money at one time to meet a compliance date.

(continued on page 3)

Inside this issue:

LTAP info	2
Pothole Patching	4
NHI	6
Everything Has Its Place	7
Training Opportunities	8

**“...Eliminate 46
deadlines and extend
and/or revise the dates
for four others”**



Christy Lovett, Program Director
**Beverly Fontenot, Staff Development/
Training Coordinator II**
Adele Samuel, Program Assistant

Address
GDOT, LTAP
276 Memorial Drive, S.W.
Atlanta, GA 30303

Phone: 1-800-573-6445
LTAP Website:
www.dot.ga.gov/localgovernment/ltap
Fax: 404-463-3564
Email: LTAP@DOT.GA.GOV

The Local Technical Assistance Program (LTAP) is a nationwide effort financed jointly by Federal Highway Administration (FHWA) and individual state departments of transportation and/or universities. The program's purpose is to disseminate the latest state-of-the-art technologies for roads, highways and bridges to municipal and county highway and transportation personnel.

Georgia LTAP is supported by FHWA and Georgia Department of Transportation. Publishing the Georgia Roads newsletter is one of LTAP's responsibilities. The opinions, findings or recommendations expressed in this newsletter are those of Georgia LTAP Center and do not necessarily reflect the views of FHWA or Georgia Department of Transportation.

Georgia Roads newsletter is distributed free of charge to counties, cities, towns and other transportation partners.

LTAP Lending Library

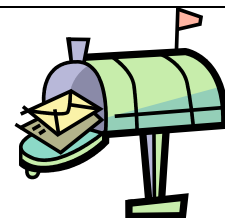


Don't forget to maximize resources and improve training by taking advantage of the LTAP lending library for hundreds of resource materials. The library is an excellent FREE source for state and local government agencies. Use our videos and other materials for your in-house training programs.

See a list of available titles at :

www.dot.ga.gov/doingbusiness/trainingresources/Documents/LTAP/Videocatrev1119.pdf

Letter from the Director



Hello Everyone,

I wanted to let you know about a few of the things going on in the LTAP world. We now have a consultant on-board that will be delivering roadway maintenance classes across the state for us. I was getting numerous request for pot-hole patching, mower safety, etc so I needed a way to help fill this hole. This fall we will be conducting a pavement maintenance and repair class and then closer to spring we will be conducting a class on mower safety and vegetation management.

FHWA will be rolling out the second round of Every Day Counts Initiatives this fall. Look for more articles on the initiatives in upcoming newsletters. If you missed anything on the first round, please visit the website at www.fhwa.dot.gov/everydaycounts/

Sincerely
Christy Lovett

(Continued from page 1)

To be clear, the elimination of a compliance date for a given standard does not eliminate the regulatory requirement to comply with that standard. The standard itself remains in the MUTCD and applies to any “new” installations. The revised tables are listed below:

Revision 1 dated May 2012 and Revision 2 dated May 2012

Table I-2. Target Compliance Dates Established by the FHWA

2009 MUTCD Section Number(s)	2009 MUTCD Section Title	Specific Provision	Compliance Date
2A.08	Maintaining Minimum Retroreflectivity	Implementation and continued use of an assessment or management method that is designed to maintain regulatory and warning sign retroreflectivity at or above the established minimum levels (see Paragraph 2)	2 years from the effective date of this revision of the 2009 MUTCD*
2A.19	Lateral Offset	Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher (see Paragraph 2)	January 17, 2013 (date established in the 2000 MUTCD)
2B.40	ONE WAY Signs (R6-1, R6-2)	New requirements in the 2009 MUTCD for the number and locations of ONE WAY signs (see Paragraphs 4, 9, and 10)	December 31, 2019
2C.06 through 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 MUTCD regarding the use of various horizontal alignment signs (see Table 2C-5)	December 31, 2019
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 MUTCD to use E1-5aP and E1-5bP plaques for left-hand exits	December 31, 2014
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices (see Paragraphs 3 and 6)	5 years from the effective date of this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
4E.06	Pedestrian Intervals and Signal Phases	New requirement in the 2009 MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds (see Paragraph 4)	5 years from the effective date of this revision of the 2009 MUTCD, or when timing adjustments are made to the individual intersection and/or corridor, whichever occurs first
6D.03	Worker Safety Considerations	New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high-visibility apparel (see Paragraphs 4, 6, and 7)	December 31, 2011
6E.02	High-Visibility Safety Apparel	New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel	December 31, 2011
7D.04	Uniform of Adult Crossing Guards	New requirement in the 2009 MUTCD for high-visibility apparel for adult crossing guards	December 31, 2011
8B.03, 8B.04	Grade Crossing (Crossbuck) Signs and Supports	Retroreflective strip on Crossbuck sign and support (see Paragraph 7 in Section 8B.03 and Paragraphs 15 and 18 in Section 8B.04)	December 31, 2019
8B.04	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019

Note: All compliance dates that were previously published in Table I-2 of the 2009 MUTCD and that do not appear in this revised table have been eliminated.

Pothole Patching

By Dr. Airton G. Kohls (Information from Evaluation of Pothole Patching Materials Report*). Reprinted with permission from TN TTAP Road Talk.



Potholes can be considered one of the most aggravating forms of asphalt deterioration and can cause danger for the traveling public. Fixing the problem appropriately can be costly and time consuming. Due to tight-

ening budgets, highway maintenance agencies have been focusing on improved materials and techniques that can lead to more economical and long-lasting solutions to pothole repair. A report on the Evaluation of Pothole Patching Material (FHWA NJ 2001-020) is available online and serves as reference material on mechanisms of pavement deterioration, bituminous patching mixtures, pavement distress types, laboratory testing, pothole repair procedures, design considerations and performance analysis of different patching materials.

Mechanism of deterioration

In flexible pavements, the formation of a pothole usually begins in a weakened area of the pavement caused by water entering cracks due to heavy traffic loads. In rigid pavements, a formation of a pothole usually occurs at joints due to expansion and contraction, or in areas where concrete has deteriorated. Potholes can also be formed on the asphalt layer that exists on top of a rigid base structure due to water entering cracks formed by reflective cracks.

Bituminous patching mixtures

The hot-mixed, hot-placed patching mixture is considered to be the highest quality having the same characteristics as asphalt concrete used for pavement surfacing. The hot-mixed, cold-placed patching mixture is produced with liquid bituminous binders and heated aggregates but is used cold from a stockpile, being workable in all weather. Similarly, the cold-mixed, cold-placed patching mixture is produced with liquid bituminous binders but with unheated aggregates, being considered the lowest quality of all patching mixtures. Bituminous patching mixtures should have some specific properties like stability, stickiness, resistance to water action, durability, skid resis-

tance, workability and storage ability. Briefly, stability is necessary to allow the patch to resist displacement by traffic and is mostly dependent on gradation of mixture and material texture. Stickiness is necessary for the patch to adhere to the sides of the pothole, and is influenced by temperature of the mixture and of the binder. Water resistance is needed to keep the binder from stripping off the aggregate and is affected by compaction and by binder and aggregate types. Durability is important for the patch having satisfactory resistance to disintegration. Skid resistance should be similar to adjacent pavement. Workability is important to enable the material to be easily shoveled and shaped and is affected mostly by temperature (low viscosity binders can help workability).

PROBLEM OR FAILURE SYMPTOM	PROBABLE CAUSES – FAILURE MECHANISMS
PUSHING, SHOVING	<ul style="list-style-type: none"> - Poor compaction - Binder too soft - Too much binder - Tack material contaminates mix - Binder highly temperature susceptible causing mix to soften in hot weather - In-service curing rate too slow - Moisture damage – stripping - Poor aggregate interlock - Insufficient voids in mineral aggregate
DISHING	<ul style="list-style-type: none"> - Poor compaction - Mixture compacts under traffic
RAVELING	<ul style="list-style-type: none"> - Poor compaction - Binder too soft - Poor cohesion in mix - Poor aggregate interlock - Moisture damage – stripping - Absorption of binder by aggregate - Excessive fines, dirty aggregate - Aggregate gradation too fine or too coarse
FREEZE-THAW DETERIORATION	<ul style="list-style-type: none"> - Mix too permeable - Poor cohesion in mix - Moisture damage - stripping
POOR SKID RESISTANCE	<ul style="list-style-type: none"> - Excessive binder - Aggregate not skid resistant - Gradation too dense
SHRINKAGE OR LACK OF ADHESION TO SIDES OF HOLE	<ul style="list-style-type: none"> - Poor adhesion - No tack used, or mix not self-tacking - Poor hole preparation

Finally, storageability is necessary so the material will not harden excessively or drain the binder off the aggregate.

Pavement distress types

Knowing the types of distresses and the related failure mechanisms is very important to address the pothole problem. The following table exemplifies some of the most common pavement distresses in cold-mix patching.

Laboratory testing

It is hard to duplicate pothole field conditions in a laboratory. Nevertheless, testing patching materials is appropriate since failure under ideal conditions usually means failure in the field. Some of the tests used for screening materials with satisfactory performance are stability, adhesion/cohesion, durability, workability, storageability, blade resistance and rolling sieve tests.

Repair procedures

Different techniques exist for pothole repairs. The main difference lies on the preparation of the pothole before the patching material is applied. The “throw-and-roll” method is the most commonly used method and material is simply placed into the pothole which may or may not be filled with water. Compaction is done by driving over the patched hole. In the “semi-permanent method,” the water and debris are first removed from the pothole and the sides of the patch area are squared up. The material is placed and compacted with appropriate devices. When using the “spray injection method,” the water and debris are first removed from the pothole and a tack coat of binder is sprayed into the pothole, on the sides and bottom. The asphalt and aggregate are then blown into the pothole with enough pressure that compaction is usually not necessary. The patched area is then covered by an aggregate layer. The “throw-and-roll” method usually presents worse performance than the more labor intensive (and more expensive) procedures.



DESIGN CONSIDERATIONS	EFFECT ON MIXTURE
BINDER CONSISTENCY (before and during placement)	<ul style="list-style-type: none"> - Too stiff may give poor coating during mixing - Too stiff makes mix hard to shovel, compact - Too soft causes drainage in stockpile - Too soft may cause stripping in stockpile - Too soft may contribute to “tenderness” during compaction
BINDER CONSISTENCY (after placement)	<ul style="list-style-type: none"> - Too soft accelerates stripping, moisture damage in-service - Too soft accentuates rutting, shoving - Too soft may lead to bleeding, which causes poor skid resistance - Must cure rapidly to develop cohesion - High temperature susceptibility causes softening and rutting in the summer
BINDER CONTENT	<ul style="list-style-type: none"> - Maximize to improve workability - Excess causes drainage in stockpile or hot box - Excess may lower skid resistance (bleeding) - Excess may cause shoving and rutting - Low binder content gives poor cohesion
ANTISTRIPPING ADDITIVE	<ul style="list-style-type: none"> - Correct type and quality may reduce moisture damage
AGGREGATE SHAPE AND TEXTURE	<ul style="list-style-type: none"> - Angular and rough aggregate gives good resistance to rutting and shoving but is hard to work
AGGREGATE GRADATION	<ul style="list-style-type: none"> - Reduced fines improves workability - Excess fines can reduce “stickiness” of mix - Coarse (>1/2 in) mixes are hard to shovel - Open-graded mixes can cure rapidly but allow water ingress - Well-graded mixes are more stable - Dirty aggregate may increase moisture damage - Too dense a gradation will lead to bleeding or thin binder coating, and a dry mixture with poor durability - Open or permeable mix may be poor in freeze-thaw resistance
OTHER ADDITIVES	<ul style="list-style-type: none"> - Short fibers increase cohesion, decrease workability

For additional information on pothole patching, download the report on the Evaluation of Pothole Patching Material (FHWA NJ 2001-020) at <http://www.qprcoldpatch.com/pdf/Rutgers-Study.pdf>

(*Information from Evaluation of Pothole Patching Materials – Dr. Ali Maher, Dr. Nenad Gucunski, William Yanko and Fotina Petsi).

Need a Quick Technical Overview?



National Highway Institute Provides Free Web-Based Training

For most of us, time is a precious commodity. We sometimes need a technical overview for some technology, technique, or concept, but we don't have the luxury of attending a full day training workshop right now.

The National Highway Institute (NHI) can be a resource in such instances. NHI offers a host of web-based, self-paced courses that are free to use. The courses run as little as 30 minutes to as high as 12 hours or more. Some are very basic and others are intended for a more intermediate or advanced audience. Many of them provide continuing education units (CEUs) for those who need them.

The Federal Highway Administration's (FHWA) National Highway Institute (NHI) can be a great source for web-based technological overviews at your pace - for free.

See below for how to easily find these courses and browse through the whole collection.

The screenshot shows the NHI website interface. At the top, there's a navigation bar with links like 'Login', 'My Training', 'My Profile', 'Checkout', 'Home', 'Contact Us', and 'Help'. Below this, there's a large banner area with a cityscape background. On the left, there's a sidebar with links: 'Register For a Course', 'Host a Course', 'Order Materials', 'About Us', 'Search for a Course' (with a search box), 'Free NHI Web Conference Seminars', and 'View Other Transportation Industry-Related Events'. The main content area features 'New and Updated Courses' with a list of courses, including 'Introduction to Federal-Aid Right of Way Requirements for Local Public Agencies - 141050'. Below this, there's a 'What's New at NHI' section. At the bottom, there's a footer with a grid of links categorized under 'NHI Web Site Resources', 'Training Courses, Seminars, and Materials', 'Training Information and Resources', 'About NHI', 'Working with NHI', and 'Other Resources'.

Topics include pavement preservation (chip seals, micro-surfacing, fog seals, crack seals, thin lift asphalt, etc.), concrete paving, inspection, basic math, GPS technology, surveying to plan reading, work zone design, traffic safety to CDL topics and many others in between.

Course Description

[Print Friendly Page](#)

Pavement Preservation Treatment Series: Micro-Surfacing - WEB-BASED

PROGRAM AREA: Pavements and Materials

COURSE NUMBER: FHWA-NHI-131110H

CALENDAR YEAR	LENGTH	CEU	FEE
2011	1 Hours	0 Units	\$0 Per Participant
2012	1 Hours	0 Units	\$0 Per Participant

TRAINING LEVEL: Intermediate

CLASS SIZE: Minimum 1; Maximum 1

DESCRIPTION:

This training is part of the "Pavement Preservation Treatment" series and is designed to provide participants with information on micro-surfacing. Topics include: pavement and traffic condition considerations, construction, and troubleshooting.

This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), which was created by FHWA, in partnership with Caltrans, the National Center for Pavement Preservation, and the Transportation Curriculum Coordination Council (TCCC) as a resource for agency and industry pavement preservation practitioners. It provides information on basic pavement preservation concepts and the different treatments available and how they should be applied, so agencies can make informed decisions when determining which treatments best fit their pavement preservation needs. The training is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

To take the entire series of trainings for the PPTCG, access the NHI website and register for NHI-131110.

OUTCOMES:

Upon completion of the course, participants will be able to:

- Identify pavement conditions most suitable for a micro-surfacing treatment.
- Describe the construction of micro-surfacing.
- Identify common problems associated with micro-surfacing and recognize their solutions.
- List the key capabilities and limitations of micro-surfacing relative to various traffic conditions.

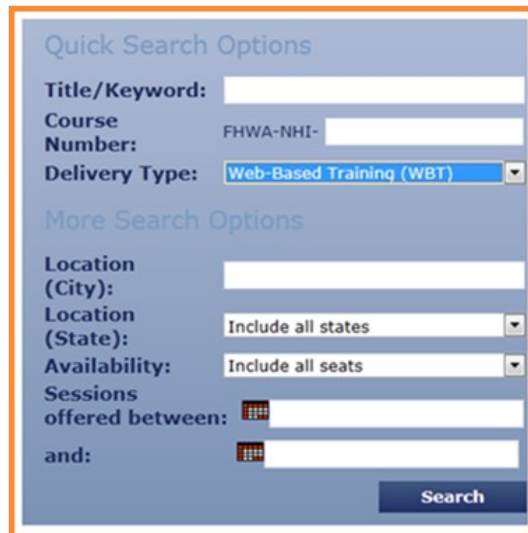
TARGET AUDIENCE:

The primary audience for the Pavement Preservation Treatment Construction WBT course is Federal, State, and local highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Although not in the primary audience, design engineers will also benefit from the online guide and the associated training. The training course is primarily targeted at individuals unfamiliar with pavement preservation policy and technical information.

Each selection has a "FHWA-NHI-XXXXXX" number next to it that is a link to the course description, its training level, expected time to complete, intended audience, and other information.

Many of the courses were developed by the Transportation Curriculum Coordination Council (TCCC), a partnership between the Federal Highway Administration (FHWA), state departments of transportation, and the highway industry.

To find these courses, start at their home page, www.nhi.fhwa.dot.gov, and in about the middle left of the page you will see a link for Search for a Course, below which you will see a “More Search Options” link - that will lead you to an expanded search engine that you can largely ignore except to select, under Delivery Type, “Web-Based Training (WBT)” and then hit Search.



The screenshot shows a search interface with two sections. The 'Quick Search Options' section includes fields for 'Title/Keyword:', 'Course Number:' (with 'FHWA-NHI-' pre-filled), and a 'Delivery Type:' dropdown menu set to 'Web-Based Training (WBT)'. The 'More Search Options' section includes fields for 'Location (City):', 'Location (State):' (with a dropdown set to 'Include all states'), 'Availability:' (with a dropdown set to 'Include all seats'), and 'Sessions offered between:' (with a date range selector). A 'Search' button is located at the bottom right of the form.

Are these a substitute for more in-depth, classroom training? Usually not, but these can get you started on your own schedule. Then, contact Georgia DOT LTAP Center at LTAP@dot.ga.gov or 1-800-573-6445 if you need something more in-depth. We may be able to provide one-on-one assistance or may have an upcoming education workshop that will fill your training needs.

Meanwhile, explore NHI’s offerings and get an introduction to some new topics on your own schedule. For free.

The TCCC's online course offerings are varied, but all focus on topics relevant to the transportation community.

You can also use this website to search for more in-depth classroom training at various locations. The fee associated with each class is listed on the website.

For more information on TCCC, please visit their newly updated website at: <http://tccc.gov/> •

Everything Has It's Place

By: Barbara Pratt, GDOT State Risk Manager

First impressions go a long way and good housekeeping sends a positive message about your work environment. Work areas should be kept neat and hazard free. Unsafe acts such as failing to properly store an item or tools, lead to over 90 percent of all accidents. Being organized can eliminate countless hazards.

The 5-S program, developed in Japan, has helped various operations function safely and more efficiently. It actually promotes having only what you need in your work area, a designated place for everything, a standard way of doing things and the discipline to maintain it.

SORT: Remove unneeded items.

SET IN ORDER: Arrange items in the order of need.

SHINE: Make sure everything is clean.

STANDARDIZE: Create method to maintain the first three and

SUSTAIN: Maintain the standardized operational and organization plan.



While it may not be practical to set up such a system in every workplace, many of the principles can be applied to reduce or eliminate hazards. Even if only one element is put in place it will make a difference in your work area .

Training Opportunities

Pavement Maintenance and Repair

September 18 – District 5, Jesup
September 19 – District 4, Tifton
September 25 – District 6, Cartersville
September 26 – District 1, Gainesville
October 2 – District 2, Tennille
October 3 – Office of Materials and Research (Forest Park)
October 9 – Macon Area Office



Class Times: 8:30– 12:00

This will be a training class to aide local governments in different maintenance treatments available to prolong the pavement surface life. Discussions will be on different patching methods (pot-hole, deep patching, mill and inlay), crack filling and strip sealing.

To register: www.dot.ga.gov/localgovernment/ltap

Visit our website for all up-to-date training opportunities.

Georgia Department of Transportation

Local Technical Assistance Program

276 Memorial Drive S.W., Atlanta, GA 30303



Sponsored by:
Georgia Department of
Transportation
U.S. Department of
Transportation
Federal Highway Administration

GEORGIA ROADS

Is a technical newsletter about local roads published by the Georgia Department of Transportation Local Technical Assistance Program. It is written for Georgia's municipal and county employees who are responsible for planning and managing local roads. All your comments, questions, and suggestions are welcome. Please call us toll free at 1.800.573.6445.